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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,927	02/27/2002	Swarn S. Kalsi	05770-170001 / AMSC-546	5818

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FISH & RICHARDSON PC
225 FRANKLIN ST
BOSTON, MA 02110

EXAMINER

TAMAI, KARL I

ART UNIT PAPER NUMBER

2834

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,927

Applicant(s)

KALSI ET AL.

Examiner

Tamai IE Karl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 20-29 and 37-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 30-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-24 and 30-36, drawn to a stator coil structure, classified in class 310, subclass 52.
 - II. Claims 20-29 and 37-41, drawn to the method of making a stator, classified in class 29, subclass 596.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and II are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the product can be produced by a materially different process, such as forming the stator is a different sequence, such as forming the channels around the coils.

2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Frank Occhiuti on 2/6/03 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-24 and 30-36. Affirmation of this election must be made by applicant in replying to this Office action. Claims 20-29 and 37-41 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 30 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Beerman et al. (Beerman)(US 4,179,635). Beerman teaches a plurality of stator coils 7 positioned in channels on the thermally conductive, non-magnetic support structure 2.

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7. Claims 1, 5, 30, and 33 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Boer et al. (Boer)(US 5,053,663). Boer teaches a plurality of stator coils 3 positioned in channels on the thermally conductive, laminated, non-magnetic support structure 2. The stator coil is positioned inside a magnetic core 1.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Albright et al. (Albright)(US 4,330,726). Boer teaches every aspect of the invention except ground plane assembly. Albright teaches a fiberglass tie to provide grounding protection (col. 6, lines 14-20). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the fiberglass tie of Albright to provide grounding protection.

10. Claims 3, 4, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Denk (US 4,709,180). Boer teaches every aspect of the invention except axial cooling passages for the circulation of a cooling liquid. Denk a cooling liquid circulated through the axial

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cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the fluid cooling of Denk to remove heat from the stator.

11. Claims 7, 8, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Laskaris (US 4,385,248). Boer teaches every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

12. Claims 6 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer and Laskaris teach every aspect of the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Laskaris with the

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epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

13. Claims 9, 13, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), in further view of Cooper et al. (Cooper)(US 4,123,676). Boer teaches every aspect of the invention except, a superconducting rotor. Cooper teaches a refrigerated, superconducting rotor. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer with the rotor of Cooper to provide a low loss field rotor.

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Albright et al. (Albright)(US 4,330,726). Boer and Cooper teach every aspect of the invention except ground plane assembly. Albright teaches a fiberglass tie to provide grounding protection (col. 6, lines 14-20). It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the fiberglass tie of Albright to provide grounding protection.

15. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Denk (US 4,709,180). Boer and Cooper teach every aspect of the invention except axial cooling passages for the circulation of a cooling liquid. Denk a

cooling liquid circulated through the axial cooling passages of the magnetic core 90. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the fluid cooling of Denk to remove heat from the stator.

16. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Laskaris (US 4,385,248). Boer and Cooper teach every aspect of the invention except, the wedge material 2 being graphite based and the epoxy filler between the coil assembly and the coil support. Boer teaches the wedges are epoxy-graphite. Boer teaches the coils are epoxy impregnated, which would inherently include epoxy between the coils and the support. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the wedges being epoxy graphite because Boer teaches the composite material is a good choice for the wedge, and with the epoxy filler between the coils and the support to reduce losses between the winding and the support.

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663), Cooper et al. (Cooper)(US 4,123,676), and Laskaris (US 4,385,248), in further view of Mariner et al. (Mariner)(US 5,863,467). Boer, Cooper, and Laskaris teach every aspect of the invention except, the epoxy being a polymer. Mariner teaches a polymer graphite material which has good thermal conductivity. It

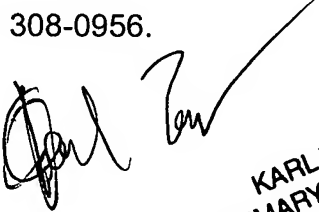
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would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer, Cooper, and Laskaris with the epoxy being a polymer because Mariner teaches the polymer graphite material has good thermal conductivity.

18. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer et al. (Boer)(US 5,053,663) and Cooper et al. (Cooper)(US 4,123,676), in further view of Gamble et al. (Gamble) (US 5,777,420). Boer and Cooper teach every aspect of the invention except, the superconductive material being HTS material. Gamble teaches a HTS material for the rotor windings. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the stator of Boer and Cooper with the HTS rotor windings because Gamble teaches that the material is preferred in superconductive rotors.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703) 308-1371. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
February 6, 2003



KARL TAMAI
PRIMARY EXAMINER